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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/642,332

08/18/2003

Miguel Alejandro Pardo

1950

136 7590 07/25/2008

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EXAMINER

JOYCE, WILLIAM C

ART UNIT

PAPER NUMBER

3682

MAIL DATE

DELIVERY MODE

07/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/642,332	<b>Applicant(s)</b> PARDO, MIGUEL ALEJANDRO	
	<b>Examiner</b> William C. Joyce	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 4/29/08.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/18/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is in response to the amendment filed April 29, 2006 for the above identified patent application.

#### ***Election/Restrictions***

1. Applicant's election without traverse of Group I in the reply filed on April 29, 2008 is acknowledged.

#### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Colombia on August 29, 2002. It is noted, however, that applicant has not filed a certified copy of the Colombian application as required by 35 U.S.C. 119(b).

#### ***Drawings***

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because each Figure must have a separate heading. Specifically, page 1 of the drawings include two different figures, both of which appear to be labeled as Figure 1. It is suggested that the top figure on page 1 be labeled "Figure 1A" and the bottom figure be labeled as "Figure 1B". Further, the specification must be amended to correspond to any amendments to the figures. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "helical line" (claim 22), "the helical line" (claim 23), "the helical line belonging to the first screw, which generates the novolute, is replaced by a solid helical profile with a curved section" (claim 24), "the flanks of the axial profile are asymmetrical" (claim 25), "the screws have variable thread pitches" (claim 26), "the screws are manufactured with variable thread heights throughout the length of the piece" (claim 27), "the load carrying capacity of the threads is increased by increasing the base height of the thread beyond the height required to accommodate the first and second screw" (claim 28), "roughly threaded screws are mated and worked under a small load, and lubricated with a bath containing abrasive particles" (claim 29) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 17-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention..

a. Claim 17 defines first and second screws, wherein the first screw is formed with an counternovolute thread profile and the second screw is formed with a novolute thread profile. However, the terminology counternovolute and novolute is not fully understood making the metes and bound of the desired patent protection unclear. It is suggested the claim be amended to clearly define the terms "counternovolute" and "novolute" so as to particularly point out and distinctly claim the invention. For the purpose of examination, the terms have been viewed as a profile similar to the profile illustrated in Figure 2.

b. Claim 19, the limitation "the line of centers" lacks proper antecedent basis.

c. Claims 22, 23, and 24, the limitation “the helical line” lacks proper antecedent basis. Further, the “helical line” should be clearly shown and labeled in the figures with an appropriate reference character.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 17-28, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki (JP 61-129489).

Suzuki illustrates in Figure 1 a transmission power system that contains a pair of mating screws (M,F), having mating threads, wherein: the axial thread profile of the first screw is defined by a counternovolutes located inside of the pitch diameter of the first screw, on one of the flanks, and another counternovolutes located inside the pitch diameter, on the other flank of the thread; the axial thread profile of the second screw is defined by a novolute located outside of the pitch diameter; on one flank of the thread, and another novolute located outside of the pitch diameter, on the other flank of the thread.

10. Claims 17-28, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Öhman (WO98/27340).

Öhman illustrates a transmission power system that contains a pair of mating screws (M,F), having mating threads, wherein: the axial thread profile of the first screw is defined by a counternovolutes located inside of the pitch diameter of the first screw, on one of the flanks, and another counternovolutes located inside the pitch diameter, on the other flank of the thread; the axial thread profile of the second screw is defined by a novolute located outside of the pitch diameter; on one flank of the thread, and another novolute located outside of the pitch diameter, on the other flank of the thread.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Suzuki (JP 61-129489) or Öhman (WO98/27340) in view of Praeg (USP 2,541,283).

Neither Suzuki nor Öhman disclose the claimed method of finishing the gear surfaces by lapping, however the operation of lapping a gear was well known in the art. For example, the prior art to Praeg teaches finishing a pair of meshing gears by introducing an abrasive material therebetween. It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the screw gears of either Suzuki or Öhman by lapping, as taught by



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Praeg, motivation being to provide a predetermined finished surface on the gear tooth flanks.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note the meshing screws of Fleytman (USP 6,148,683).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Joyce whose telephone number is (571) 272-7107. The examiner can normally be reached on Monday - Thursday 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William C. Joyce/ 7/20/08  
Primary Examiner, Art Unit 3682